Amendments to the Specification

Please replace paragraph [0011] with the following amended paragraph:

[0011] In order to achieve the objects set out above, the present invention provides a method for making a carbon nanotube-based device. The method is able to control a direction of growth of a carbon nanotube array, and comprises the steps of: (1) providing a substrate; (2) depositing a layer of catalyst on the substrate; (3) depositing a layer of ~~catalyst-doped~~ growth-affective material on the catalyst layer, for varying a reaction rate of synthesis of an aligned carbon nanotube array; (4) annealing the catalyst and the ~~catalyst-doped~~ growth-affective material in an oxygen-containing gas at a low temperature; and (5) exposing the nano-sized particles and ~~catalyst-doped~~ growth-affective material to a carbon-containing source gas at a predetermined temperature such that the aligned carbon nanotube array grows from the substrate.

Please replace paragraph [0014] with the following amended paragraph:

[0014] FIG. 2 is similar to FIG. 1, but showing a ~~catalyst-doped~~ growth-affective material layer being deposited on the catalyst layer in accordance with said preferred method;

Please replace paragraph [0015] with the following amended paragraph:

[0015] FIG. 3 is similar to FIG. 2, but showing the treated substrate after annealing, heating and exposure to protective and carbon—containing source gases in accordance with said preferred method, wherein the ~~catalyst-doped~~

growth-affective material and the catalyst have changed into alloy catalytic nano-sized particles; and

Please replace paragraph [0021] with the following amended paragraph:

[0021] A ~~catalyst-doped~~ growth-affective material layer 121 is then deposited on the catalyst layer 13. A linear evaporation source 12 is disposed above the photo-resist layer 11. An end of the linear evaporation source 12 and an inner surface (not labled) of the photo-resist layer 11 share a common vertical plane. The ~~catalyst-doped~~ growth-affective material layer 121 is deposited on the catalyst layer 13 by thermal evaporation. The thickness of the ~~catalyst-doped~~ growth-affective material layer 121 is preferably in the range from zero to 10 nanometers, and gradually decreases along a given direction.

Please replace paragraph [0022] with the following amended paragraph:

[0022] The ~~catalyst-doped~~ growth-affective material layer 121 is capable of varying reaction rates of synthesis of carbon nanotubes. A content of ~~catalyst-doped~~ growth-affective material in the ~~catalyst-doped~~ growth-affective material layer 121 determines a particular reaction rate of synthesis of carbon nanotubes. In the preferred method, the ~~catalyst-doped~~ growth-affective material is copper, which is capable of providing a decreased reaction rate of synthesis of carbon nanotubes.

Please replace paragraph [0023] with the following amended paragraph:

[0023] Alternatively, the linear evaporation source 12 may be substituted by a point evaporation source that moves along a pre-defined line. Furthermore, the above-described method of depositing the ~~catalyst-doped~~ growth-affective material layer 121 may alternatively employ other techniques such as e-beam evaporation. Moreover, the ~~catalyst-doped~~ growth-affective material can be selected from group of cobalt, nickel, molybdenum, ruthenium, manganese or a combination of the materials thereof.

Please replace paragraph [0024] with the following amended paragraph:

[0024]~~....~~ The treated substrate 10 is then annealed in an oxygen-containing gas at a low temperature for 10 hours until the catalyst layer 13 is oxidized and changed into separate nano-sized particles (not shown). Preferably, said low temperature is in the range from 200°C to 400°C. The treated substrate 10 is then placed in a furnace (not shown). The furnace is heated up to a predetermined temperature in a flowing protective gas. The predetermined temperature may vary according to the type of catalyst layer 13 used. In the preferred method, iron is used as the catalyst layer 13, and the predetermined temperature is in the range from 600°C to 700°C. The protective gas can be selected from the group consisting of noble gases and nitrogen. Preferably, argon is used as the protective gas. A carbon source gas is then introduced into the furnace. In the preferred method, acetylene is used as the carbon source gas. From the time the carbon source gas is introduced, the separate nano-sized particles and the ~~catalyst-doped~~ growth-affective material layer 121 cooperatively form the alloy catalytic nano-sized particles 131, and the aligned carbon

nanotube array 15 grows from the alloy catalytic nano-sized particles 131.

Please replace paragraph [0025] with the following amended paragraph:

[0025] The alloy catalytic nano-sized particles 131 are larger at a region corresponding to the thick end of the ~~catalyst-doped~~ growth-affective material layer 121, said thick end having a higher content of the ~~catalyst-doped~~ growth-affective material. Correspondingly, the alloy catalytic nano-sized particles 131 are smaller at a region corresponding to the thin end of the ~~catalyst-doped~~ growth-affective material layer 121, said thin end having a lower content of the ~~catalyst-doped~~ growth-affective material. A change in the content of the alloy catalytic nano-sized particles 131 is gradual from said region corresponding to said thick end to said region corresponding to said thin end.

Please replace paragraph [0027] with the following amended paragraph:

[0027] It will be apparent to those having ordinary skill in the field of the present invention that the above-described order of deposition of the catalyst layer 13 and the ~~catalyst-doped~~ growth-affective material layer 121 may be reversed. If this is done, the aligned carbon nanotube array 15 with progressive bending in the predetermined direction is still attained.